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February 26, 2007

Ms. Amy M. Bennett
Standards Coordinator
SCDHEC – Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

Subject: SC Water Classifications and Standards (R.61-68)
Comments to Notice of Drafting

Dear Ms. Bennett:

SCANA, and its subsidiaries, is hereby submitting comments in response to the January 26, 2007, notice of drafting for South Carolina's *Water Classifications and Standards (R.61-68)* regulation. SCANA appreciates the opportunity to participate in the triennial review process and hopes that the following information will assist the Department in developing a regulation that protects the environment yet is not economically detrimental to the people of South Carolina. In that regard, SCANA believes that certain existing standards are more stringent than necessary to adequately protect human health and the indigenous biological community of the state's surface waters. It is only since the Department's policies regarding implementation of the regulations have developed that their true cost has been realized. Our comments are as follows:

ARSENIC STANDARD

While the following information has been delivered to the Department several times, in several different formats, and by several different stakeholders, SCANA believes the importance of this issue and its impact to the state's economy demands restating it here.

The assumptions that EPA used to derive its recommended arsenic water quality standards for organism only, and water and organism consumption, are technically flawed. The rationale and technical justification supporting a change to the South Carolina surface water arsenic standard is addressed below. Therefore, South Carolina's surface water quality arsenic standard as established in Regulation 61-68 should be revised to align with both the South Carolina drinking water and groundwater arsenic standard (10 ppb). Revising the surface water arsenic standard will not diminish the protection to human health and the environment because the 10 ppb standard was established by a panel of technical experts, using a peer reviewed process, with the objective to establish a drinking water standard protective of human health. EPA re-evaluated and confirmed the 10 ppb standard as recently as 2003.

Rationale for Revising South Carolina's Surface Water Arsenic Standard

1. EPA's recommended surface water arsenic standards are guidelines only. Many states (36 states, which include North Carolina, Georgia, Tennessee, Texas, and Louisiana) have chosen to establish a surface water arsenic standard less restrictive than what the EPA recommended. Most states have chosen to set their surface water arsenic standard at 10 ppb, which aligns with the drinking water MCL for arsenic. EPA recognizes that arsenic ambient water quality criterion (AWQC) for protection of human health may be established by states at a level less restrictive than EPA's recommendation, and adopting an arsenic standard more restrictive than that of other states, particularly Southeastern states, places South Carolina dischargers at a competitive disadvantage.

2. The Electric Power Research Institute (EPRI) conducted a thorough literature search in 2003 which concluded that the EPA recommended 18 ppt (organism only) and 140 ppt (water and organism) arsenic standards are scientifically flawed (Critical Evaluation of Ambient Water Quality Criteria for Arsenic: Speciation and Bioaccumulation Issues, EPRI, Palo Alto, CA: 2003. 1009211). EPRI concluded, and was supported by the EPA Region VI studies conducted in 2001, that arsenic does not readily bioaccumulate in freshwater fish at anywhere near the factors EPA used in their calculations. In fact, studies suggest that freshwater fish have nearly zero bioaccumulation of inorganic arsenic when exposed to concentrations up to 100 ppb arsenic. The EPRI study also concluded (based on numerous fish tissue analyses) that EPA used an incorrect inorganic-to-organic arsenic ratio in calculating its organism only arsenic standard. The percent of inorganic arsenic (the carcinogenic form of arsenic) in freshwater fish is actually closer to 8%, but as stated within R.61-68, the state's criterion is based solely on the inorganic fraction.

   The EPRI report incorporates a cancer risk factor of 1x10E-6 and an increased fish consumption of 17.5 grams/day. These factors align with current EPA recommendations and with South Carolina's cancer risk standard. Using the revised bioaccumulation and bioconcentration factors, factoring in a conservative 17.5 kg/day daily dietary fish intake, and using an average percent of inorganic arsenic found in freshwater fish tissue, the resulting organism only arsenic standard is approximately 99 ppb. This is a much higher value than the 140 ppt number EPA recommended and indicates that the 18 ppt (water and organism) standard is also flawed.

3. Region VI-EPA chose to adopt a 20.5 ppb organism only arsenic standard which is 146 times less restrictive than the 140 ppt standard. EPA Region VI established a regional AWQC arsenic standard for protection of human health and published the standard in the "Region 6 Interim Strategy: Arsenic – Freshwater Human Health Criterion for Fish Consumption" (EPA, 1998). Their organism only arsenic standard was derived using the following criteria/assumptions:

   - A cancer slope factor of 1.75 mg/kg/day and a cancer risk factor of 1: million

- Bioconcentration factor of 1 kg/L based on data published in the EPA's Great Lakes Imitative.

- Taking into account that no more than 30% of the arsenic in fish is the harmful inorganic form.

4. The SC drinking water standard for arsenic is 10 ppb. The S.C. groundwater standard is also 10 ppb. The 10 ppb standard for drinking water and groundwater is established to be protective of human health. For consistency, because the 10 ppb arsenic standard for drinking water was established by EPA to be protective of human health, many states (as previously noted) use this standard as their arsenic standard for drinking water, groundwater, and surface water. Since the 10 ppb arsenic standard that South Carolina has established for drinking water and groundwater is deemed to be adequately protective of human health, then there is no rational reason to have a more conservative standard for surface water arsenic.

Summary

In summary, the South Carolina surface water quality arsenic standards for the protection of human health should be revised to 10 ug/l. Changing both the water and organism standard (currently 18 ppt) and the organism only standard (currently 140 ppt) to 10 ppb would align South Carolina's surface water arsenic standard with South Carolina's groundwater and drinking water standards which are set at the Maximum Concentration Level (MCL). The MCL is a standard established by the EPA, using a rigorous scientific review process, to a level that provides protection to human health. Most states adopt the arsenic MCL as their surface water, groundwater, and drinking water standard.

SOURCE WATER PROTECTION

While there are only a few sections of R.61-68 that relate to source water protection and those sections have not been modified since the 2001 triennial review, it is only since the Department's policies regarding implementation of the associated regulations into NPDES permit conditions that their true cost has been realized. Therefore, SCANA is further elaborating on similar comments presented in November 2000.

Section E.14.c(5) of the regulation appears to the be primary section that is causing inconsistencies between the Department's source water protection program/plan and the NPDES permitting policies/procedures. It states,

> The Department may, after Notice of Intent included in a notice of a proposed NPDES permit in accordance with Regulation 61-9.124.10, determine that drinking water MCLs or W/O shall not apply to discharges to those waterbodies where there is: **no potential to affect** an existing or proposed drinking water source and no state-approved source water protection area.

The Department has adopted extremely conservative procedures with regard to the "potential to affect" source water protection areas (SWPA's), and this can significantly increase the cost for compliance with unnecessarily stringent NPDES permit limitations.

SCDHEC permitting procedures apply the water/organism (W/O) human health based water quality criteria when there is a potable water intake "downstream." In several cases, these criteria and associated NPDES permit limits are considerably more stringent than those based on the consumption of organisms only (human health-based) or those based on aquatic life criteria; therefore, it is their application, which is based on the discharge's potential to affect the potable water intake, that must be evaluated. A more scientific basis must be determined.

The 1996 Amendments to the federal Safe Drinking Water Act (SDWA) provide for a greater focus on pollution prevention as an approach to protecting surface water and groundwater supplies from pollution. The amendments require SCDHEC to provide Source Water Assessments for federally defined public water supply systems. The US EPA approved South Carolina's *Source Water Assessment and Protection Program Plan* on November 6, 1999. This plan includes detailed procedures how the state will evaluate the susceptibility of potable water intakes to upstream risk.

Protecting potable water intakes from upstream NPDES dischargers is necessary to ensure the potable water treatment plants can achieve their "outgoing" MCL's and protect human health during consumption. The primary, though by far not the only, factor in prioritizing susceptibility of the intake is the distance of the associated "risks" upstream from the intake. Based on the upstream travel time distance, SWPA's are developed. The designation of the primary and secondary SWPA's is based upon hydraulic time of travel (TOT) calculations performed by the U.S. Geological Survey (USGS) using the procedure described in the document entitled, "Determination of the Primary and Secondary Source-Water Protection Areas for Selected Surface-Water Public-Supply Systems in South Carolina, 1999," USGS Water Resource Investigations Report 00-4097.

However, the Department's approach to protecting potable water intakes and controlling the risk (potential to affect) when developing NPDES permit limitations has evolved into a more conservative approach than that used only a few years ago. Initially it was based on the permit writers' best professional judgment, then the Department selected an arbitrary value of 50 river miles upstream, and now the Department insists that to protect the drinking water intake, the discharge cannot impact even the SWPA. Again, the source water protection plan was developed to protect the intake, but the Department insists that the SWPA is what is being protected, as an added, overly conservative, safety factor.

R.61-68.G.10 states that "Freshwaters (FW) are freshwaters suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department." SCANA believes that a permittee should be able to demonstrate, through the use of scientific methods acceptable to the Department, that there is no reasonable potential for the water body to exceed the W/O criteria or MCL's at the intake even though the SWPA may be impacted. Unfortunately, and in an unprecedented manner, the Department has indicated that better

science cannot result in exceptions to their policies regarding source water protection. This includes NPDES discharges within or upstream of SWPA's.

Regarding potential impacts within SWPA's there is an additional section of R.61-68 that may require modification to achieve a resolution to these issues. Part C.10.a of R.61-68 leads to this level of protection as it states, with regards to mixing zones, that:

> "In order to protect human health, mixing zones are not allowed when: they would endanger public health and welfare, any portion of the mixing zone would be in a state-approved source water protection area, the mixing zone…"

The Department indicated that while the regulation was modified to include this requirement back in 2001, they have allowed mixing zones (i.e., dilution/dilution factors) within SWPA's when calculating NPDES permit limits. The elimination of mixing zones in SWPA's would mean the elimination of dilution in calculating permit limits and the requirement for meeting 100% WET limits and chemical-specific limits based directly on the most restrictive water quality criteria. Simply put, existing NPDES dischargers' ability to comply with these requirements would essentially be impossible based on the required treatment costs. Since the intent of the source water protection program is to protect the potable intakes, mixing zones should be allowed if scientifically justified. In addition, W/O and MCL's should not automatically be applied to discharges in SWPA's if the permittee proves by scientific means that there is no potential to affect the intake.

The Department's extremely conservative permitting policy regarding Section E.14.c(5) requires the application of W/O and MCL's in NPDES permits regardless of the upstream distance/travel time. What this essentially means is that the Department will always determine that there is a potential to affect a downstream potable water intake - meaning, an NPDES discharger in the upstate could have the potential to impact a drinking water intake in the low country (assuming that was the nearest downstream potable water intake). As mentioned, the Department has also determined that it will not allow modeling, instream sampling, or some other scientific proof that physical and biological instream processes reduce the concentrations to levels where there is no potential for the NPDES discharged parameters to reach the intake.

Due to the cost associated with compliance with unnecessarily stringent NPDES permit limitations, SCANA is presenting these comments in order to initiate a discussion with the Department that will lead to modification of the regulation to more clearly define the policies and permitting procedures associated with the source water protection program. SCANA requests that the isolated references to a source water protection program be deleted from the regulation unless and until a comprehensive regulation for source water protection, developed in a manner consistent with the South Carolina Administrative Procedures Act, is written.

SECTION D.2.b

The first sentence was mistakenly changed in 2001 from "economically and technologically reasonable" to "economically or technologically reasonable." As during the 2001 triennial review, SCANA requests that this be changed back to its original intent.

RESTRICTION OF INSTREAM DILUTION

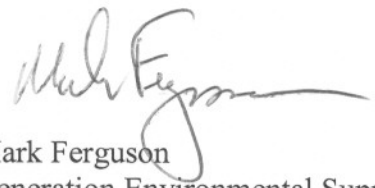
SC Regulation 61-9, *Water Pollution Control Permits*, contains requirement that SCANA believes should be included in R.61-68 and the associated permitting procedures more clearly defined. Many rivers in South Carolina are listed as impaired water bodies for the consumption of fish tissue due to methylmercury, even though the instream mercury concentration is not higher than the most restrictive stream standard. Whether the impairment is due to mercury, iron, or another parameter, SCANA does not agree, as mentioned in permit rationales, that section 122.44(d)(1)(ii) of R.61-9 is applicable to restrict the use of dilution flow when evaluating the reasonable potential for the discharge to result in an exceedance of the stream standards. With regard to establishing limitations, standards, and other permit conditions, that part states,

> (d) Water quality standards and State requirements: Any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under sections 301, 304, 306, 307, and 318, and 405 of CWA necessary to:
>
> > (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality.
> >
> > > (ii) When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water.

Due to the cost associated with compliance with unnecessarily stringent NPDES permit limitations, SCANA is presenting these comments in order to initiate a discussion with the Department that will lead to modification of the regulation to more clearly define the policies and permitting procedures associated with this statute.

SCANA appreciates the opportunity to participate in the triennial review process and hopes that the information presented will assist the Department in updating R.61-68 to ensure that it protects the environment yet is not economically detrimental to the people of South Carolina. If you have any questions regarding this request, please do not hesitate to contact me at (803) 217-8103 or via e-mail at mferguson1@scana.com.

Sincerely,



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cc: J.W. Preston/S.M. Ferguson/file
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